

## National Unit Specification: general information

<b>UNIT</b>	Geology, People and Environment (Intermediate 1)
<b>NUMBER</b>	D245 10
<b>COURSE</b>	Geology (Intermediate 1)

### SUMMARY

This unit seeks to provide candidates with an introduction to economic, environmental and engineering geology. Candidates will acquire knowledge and understanding of how ores, fossil fuels and construction materials are formed, found, extracted and used; the use and misuse of water resources; the application of geological studies to civil engineering; problems caused by activities such as mining and quarrying; and conservation and resource management. Skills of problem solving, observation, recording and communication will be developed. The unit has a strong environmental bias which will enhance the development of caring and thoughtful attitudes towards problems of resource usage.

### OUTCOMES

- 1 Demonstrate knowledge and understanding related to economic, environmental and engineering geology.
- 2 Solve problems related to economic, environmental and engineering geology.

### RECOMMENDED ENTRY

Entry is at the discretion of the centre.

### CREDIT VALUE

1 credit at Intermediate 1.

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#### Administrative Information

<b>Superclass:</b>	RF
<b>Publication date:</b>	November 1999
<b>Source:</b>	Scottish Qualifications Authority
<b>Version:</b>	03

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## **National Unit Specification: general information (cont)**

**UNIT**      Geology, People and Environment (Intermediate 1)

### **CORE SKILLS**

This unit gives automatic certification of the following:

<b>Complete core skills for the unit</b>	None
<b>Core skills components for the unit</b>	Critical Thinking                      Int 1
	Using Graphical Information      Int 1

Additional information about core skills is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

## **National Unit Specification: statement of standards**

### **UNIT**      Geology, People and Environment (Intermediate 1)

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

#### **OUTCOME 1**

Demonstrate knowledge and understanding related to economic, environmental and engineering geology.

##### **Performance criteria**

- (a) The formation, discovery, extraction and use of ores, fossil fuels and construction materials are accurately described.
- (b) The processes involved in the water cycle are accurately described.
- (c) The major sources, uses and users of water are accurately described.
- (d) The source, occurrence and use of groundwater is accurately described.
- (e) The environmental effects of resource extraction and waste disposal are accurately described.
- (f) The role of geological site investigation prior to civil engineering is accurately described.
- (g) The need for conservation is correctly explained in terms of physical resources.

##### **Evidence requirements**

Evidence is produced from a closed book test which demonstrates successful achievement of all of the above performance criteria.

#### **OUTCOME 2**

Solve problems related to economic, environmental and engineering geology.

##### **Performance criteria**

- (a) Relevant information is selected and presented in an appropriate format.
- (b) Information is accurately processed using calculations where appropriate.
- (c) Valid conclusions are drawn and explanations given are supported by evidence.
- (d) Predictions and generalisations are made based on the available evidence.

##### **Evidence requirements**

Evidence is produced from a closed book test which demonstrates successful achievement of all of the above performance criteria, including the interpretation and communication of graphical information at the appropriate level. With reference to PCs (c) and (d), the candidate's answers must show that the main features of the situation have been recognised and a suitable approach selected to deal with it.

## National Unit Specification: support notes

### UNIT Geology, People and Environment (Intermediate 1)

This part of the unit specification is offered as guidance. The support notes are not mandatory.

While the time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this unit, and on learning and teaching approaches, is given in the table in the Content section of the course details.

### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Outcomes 1 and 2 will be assessed by means of an integrated end of unit test. The end of unit test has no specified mark allocation. However, the following approximate percentage mark allocations are recommended. (Note that the numbers given express a ratio of marks allocated. Candidates would not be expected to undertake test items with the actual mark allocations shown.)

#### **Outcome 1 (knowledge and understanding) 60%**

**PC:**

- |  |      |
|--|------|
| (a) Ores, fossil fuels and construction materials.                   |      |
| Ores.  | (10) |
| Fossil fuels.  | (10) |
| Construction materials.  | (6)  |
| (b) Water cycle.   | (4)  |
| (c) Sources, uses and users of water.                                | (4)  |
| (d) Groundwater.   | (8)  |
| (e) Environmental effects of resource extraction and waste disposal. | (6)  |
| (f) Geological site investigation prior to civil engineering.        | (6)  |
| (g) Need for conservation.   | (6)  |

#### **Outcome 2 (problem solving) 40%**

**PC:**

- |  |      |
|--|------|
| (a) Selecting and presenting information.        | (6)  |
| (b) Processing information.                      | (10) |
| (c) Drawing conclusions and giving explanations. | (16) |
| (d) Making predictions and generalisations.      | (8)  |

Test items should be constructed to allow candidates to generate evidence relating to the performance criteria as follows:

- |  |  |
|--|--|
| (a) Selecting, presenting and processing information   |  |
| • Sources of information include text; straightforward tables, diagrams, charts and graphs; numerical information. |  |
| • Formats of presentation include written responses; straightforward tables, diagrams, charts and graphs.          |  |
| (b) Calculations include totals, differences, averages, ratios and percentages.                                    |  |

## **National Unit Specification: support notes (cont)**

### **UNIT**      Geology, People and Environment (Intermediate 1)

- (c) From information given, candidates should be able to draw straightforward conclusions with explanations supported by the evidence.
- (d) From given situations, candidates should be able to make simple predictions and generalisations eg by predicting the effect of extracting ground water from the area of a tributary on the flow of the main river.

### **SPECIAL NEEDS**

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998).